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Inventor(s): Fender, et al.

Serial No.: 10/606,897

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Title: System and Method for Performing Multi-Source Measurements

COMMISSIONER FOR PATENTS
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Alexandria VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Sir:

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on May 5, 2006. This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(e))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new grounds of rejection.)

No fee is required for filing of this Reply Brief.

If any fees are required please charge Deposit Account 50-1078.

Respectfully submitted,

Fender, et al.

By

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measurement icons 508, 509, 510, 511 displayed in different regions of a graphical user interface (GUI) 500. FIGS. 2-4 illustrate flow charts of methods for performing multi-source measurements.

Claim 21:

Independent claim 21 is directed to a method that includes displaying first and second waveforms 506A and 506B (FIGS. 5A-6B), and a plurality of icons 508, 509, 510, 511 (FIGS. 5A-6B). The method also includes enabling a user to select one of the plurality of icons, described, for example, in paragraphs 00021, 00023, 00026 of the present application. The method also includes enabling a user to mark a first point on the first waveform, described, for example, in paragraphs 0021, 00023, 00026, and enabling a user to mark a second point on the second waveform (paragraphs 00022, 00025, 00028). Finally, the method includes performing a measurement based on the selected icon, the first marked point, and the second marked point (paragraphs 00022, 00025, 00029).

Claim 28:

Independent claim 28 is directed to a measuring and testing instrument (MTI) 102, which is illustrated, for example, in FIG. 9A. The MTI 102 comprises a display device; means for receiving user input; and means for measuring a parameter based on a selected icon, a first point, and a second point. The display device 103 is configured to display a first waveform (FIGS. 5A-6B; 506A), a second waveform (FIGS. 5A-6B; 506B), and a plurality of icons (FIGS. 5A-6B; 508, 509, 510, 511). The means for receiving user input corresponds, for example, to at least the user-input interface 924 shown in FIG. 9A. The means for measuring the parameter corresponds, for example, to at least the measurement invocation system 918, which is described, for example, in paragraph 00060.

Claim 36:

Claim 36 is directed to a graphical user interface (GUI) 500, which is shown, for example, in FIGS. 5A-6B. The GUI comprises a waveform display region 502 and a toolbar region 504 (paragraph 00030). The first waveform 506A and second waveform 506B are displayed in the waveform display region 502 (FIGS. 5A-6B). A plurality of icons 508, 509, 510, 511 are displayed in the toolbar region. The GUI further includes a

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first marker displayed on a first point of the first waveform and a second marker displayed on a second point of the second waveform, which corresponds to dragging and dropping icons as shown, for example, in FIGS. 5B-6B.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The sole issue on appeal is the rejection of claims 21-24, 26-33, and 35-39 under 35 U.S.C. §102(b) as allegedly being anticipated by *Taraki et al.* (U.S. Patent No. 5,898,307).

VII. ARGUMENT

In general, the cited references of record fail to measure a parameter defining a relationship between two different waveforms. In contrast to the claims, the measurements in the cited references are based on characteristics of an individual waveform. The claims, set forth below, include features relating to this general concept of measuring a parameter defining a relationship between waveforms. The claims are therefore believed to be allowable over the cited references of record.

A. Claims 21-24, 26, and 27

Independent claim 21 is directed to a method that comprises displaying first and second waveforms. The method further comprises displaying a plurality of icons, each icon corresponding to a *measurement to be performed of a parameter defining a relationship between the first waveform and the second waveform*. *Taraki et al.* fails to teach this claimed feature in at least the following respects.

Taraki et al. fails to disclose a *parameter defining a relationship between the first waveform and the second waveform*. Instead, *Taraki et al.* measures parameters with respect to a single waveform. For example, *Taraki et al.* appears to disclose that a first voltage V1 and a second voltage V2 can be measured for the first waveform 52 (see, for example, FIG. 3). From the values of V1 and V2, a voltage difference V DIFF can be measured based on V1 and V2 for the first waveform 52. The same measurements can be made for the second waveform 52a. In this respect, a point on one waveform can be measured with respect to another point on the same waveform. Although *Taraki et al.* displays two waveforms simultaneously and can synchronize cursors 41 and 51 with cursors 41a and 51a (see FIG. 3), *Taraki et al.* fails to measure a parameter defining a relationship

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between the first waveform 52 and the second waveform 52a. Instead, each waveform is measured separately.

Claim 21 also includes *performing a measurement based on the selected icon, the first point on the first waveform, and the second point on the second waveform*. Taraki *et al.* fails to disclose the claimed feature of performing a measurement based on a selected icon, a first point on the first waveform, and a second point on the second waveform. Taraki *et al.* fails to perform a measurement based on points from two different waveforms. Instead, all measurements by Taraki *et al.* are based on the same waveform.

For at least these reasons, Appellants believe that claim 21 is allowable over Taraki *et al.* In addition, claims 22-24, 26, and 27 are believed to be allowable for at least the reason that they depend from allowable independent claim 21.

B. Claims 28-33 and 35

Independent claim 28 is directed to a measuring and testing instrument (MTI) comprising a display device, means for receiving user input, and means for measuring. The display device is configured to display a first waveform, a second waveform, and a plurality of icons, *each icon corresponding to a measurement to be performed of a parameter defining a relationship between the first waveform and the second waveform*. Taraki *et al.* fails to teach this claimed feature in at least the following respects.

Taraki *et al.* fails to disclose *a parameter defining a relationship between the first waveform and the second waveform*. Instead, Taraki *et al.* measures parameters with respect to a single waveform. For example, Taraki *et al.* appears to disclose that a first voltage V1 and a second voltage V2 can be measured for the first waveform 52 (see, for example, FIG. 3). From the values of V1 and V2, a voltage difference V DIFF can be measured based on V1 and V2 for the first waveform 52. The same measurements can be made for the second waveform 52a. In this respect, a point on one waveform can be measured with respect to another point on the same waveform. Although Taraki *et al.* displays two waveforms simultaneously and can synchronize cursors 41 and 51 with cursors 41a and 51a (see FIG. 3), Taraki *et al.* fails to measure a parameter defining a relationship between the first waveform 52 and the second waveform 52a. Instead, each waveform is measured separately.

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Claim 28 also includes *means for measuring a parameter based on the selected icon, the first point, and the second point*, in which the first point is a point on the first waveform and the second point is a point on the second waveform. *Taraki et al.* fails to disclose this claimed feature of measuring a parameter that is based on a selected icon, a first point on the first waveform, and a second point on the second waveform. *Taraki et al.* fails to measure a parameter based on points from two different waveforms. Instead, all measurements by *Taraki et al.* are based on the same waveform.

For at least these reasons, Appellants believe that claim 28 is allowable over *Taraki et al.* In addition, claims 29-33, and 35 are believed to be allowable for at least the reason that they depend from allowable independent claim 28.

C. Claims 36-39

Independent claim 36 is directed to a graphical user interface (GUI) comprising a waveform display region and a toolbar region. The toolbar region displays a plurality of icons, *each icon corresponding to a measurement to be performed of a parameter defining a relationship between the first waveform and the second waveform*. *Taraki et al.* fails to teach this claimed feature in at least the following respects.

Taraki et al. fails to disclose *a parameter defining a relationship between the first waveform and the second waveform*. Instead, *Taraki et al.* only measures parameters with respect to a single waveform. Although, *Taraki et al.* can display two waveforms simultaneously and synchronize cursors 41 and 51 for one waveform with cursors 41a and 51a of another (see FIG. 3), *Taraki et al.* fails to measure a parameter that relates the first waveform with the second waveform. Instead, each waveform is measured individually.

Taraki et al. fails to disclose *a parameter defining a relationship between the first waveform and the second waveform*. Instead, *Taraki et al.* measures parameters with respect to a single waveform. For example, *Taraki et al.* appears to disclose that a first voltage V1 and a second voltage V2 can be measured for the first waveform 52 (see, for example, FIG. 3). From the values of V1 and V2, a voltage difference V DIFF can be measured based on V1 and V2 for the first waveform 52. The same measurements can be made for the second waveform 52a. In this respect, a point on one waveform can be measured with respect to another point on the same waveform. Although *Taraki et al.* displays two waveforms simultaneously and can synchronize cursors 41 and 51 with cursors

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41a and 51a (see FIG. 3), Taraki *et al.* fails to measure a parameter defining a relationship between the first waveform 52 and the second waveform 52a. Instead, each waveform is measured separately.

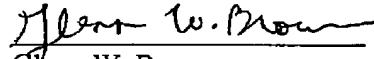
For at least these reasons, Appellants believe that claim 36 is allowable over Taraki *et al.* In addition, claims 37-39 are believed to be allowable for at least the reason that they depend from allowable independent claim 36.

CONCLUSION

Based upon the foregoing discussion, Appellants respectfully request that the rejection of claims 21-24, 26-33, and 35-39 be overruled and withdrawn by the Board, and that the application be allowed to issue as a patent with all pending claims.

It is believed that no additional fees are due in connection with this Reply Brief. If, however, any additional fees are deemed to be payable, you are hereby authorized to charge any such fees to deposit account No. 50-1078.

Respectfully submitted,


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VIII. CLAIMS - APPENDIX

1-20. (Canceled)

21. A method comprising:

displaying a first waveform and a second waveform;

displaying a plurality of icons, each icon corresponding to a measurement to be performed of a parameter defining a relationship between the first waveform and the second waveform;

enabling a user to select one of the plurality of icons;

enabling the user to mark a first point on the first waveform;

enabling the user to mark a second point on the second waveform;

performing a measurement based on the selected icon, the first point on the first waveform, and the second point on the second waveform.

22. The method of claim 21, wherein the parameter is one of a set-up time, a hold-time, a time difference, and a phase difference.

23. The method of claim 22, further comprising:

displaying the measured parameter.

24. The method of claim 21, wherein enabling the user to mark the first and second points further comprises:

responding to a user-manipulated pointing device, the pointing device comprising one of a mouse, a joy-stick, a track-ball, a keyboard, a touch-screen, and a touch-pad.

25. The method of claim 21, wherein enabling the user to mark the first and second points further comprises:

placing markers on the first and second points, the markers being similar in appearance to the selected icon.

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26. The method of claim 21, wherein displaying the first and second waveforms further comprises:

receiving first and second signals from a device under test, the first and second signals corresponding to the first and second waveforms, respectively.

27. The method of claim 21, further comprising:
enabling the user to set a measurement threshold based on a percentage of change of one of the first and second waveforms.

28. A measuring and testing instrument (MTI) comprising:
a display device configured to display a first waveform, a second waveform, and a plurality of icons, each icon corresponding to a measurement to be performed of a parameter defining a relationship between the first waveform and the second waveform;
means for receiving user input, the user input corresponding to a selected first point on the first waveform, a selected second point on the second waveform, and a selected icon; and
means for measuring a parameter based on the selected icon, the first point, and the second point.

29. The MTI of claim 28, wherein the measured parameter is one of a set-up time, a hold-time, a delay, and a phase difference.

30. The MTI of claim 29, wherein the display device is further configured to display the measured parameter.

31. The MTI of claim 28, further comprising a pointing device allowing a user to select the first point on the first waveform, the second point on the second waveform, and one of the displayed icons.

32. The MTI of claim 31, wherein the pointing device is one of a mouse, a joystick, a track-ball, a keyboard, a touch-screen, and a touch-pad.

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33. The MTI of claim 28, wherein the display device is further configured to display a first mark representing the selected first point on the first waveform and a second mark representing the selected second point on the second waveform.

34. The MTI of claim 33, wherein the first and second marks are similar in appearance to the selected icon.

35. The MTI of claim 28, further comprising an oscilloscope configured to receive the first and second waveforms from a device under test.

36. A graphical user interface (GUI) for use with a measurement device, the GUI comprising:

a waveform display region for displaying a first waveform and a second waveform;
and

a toolbar region for displaying a plurality of icons, each icon corresponding to a measurement to be performed of a parameter defining a relationship between the first waveform and the second waveform;

wherein, by manipulation of a pointing device, a first marker is displayed on a first point of the first waveform and a second marker is displayed on a second point of the second waveform.

37. The GUI of claim 36, further comprising an information region for displaying a type of measurement being performed based on a selected icon.

38. The GUI of claim 36, further comprising a result region for displaying results of a measurement.

39. The GUI of claim 36, wherein the first and second markers are positioned over the first and second waveform, respectively, by a drag-and-drop process.

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IX. EVIDENCE - APPENDIX

None.

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IX. RELATED PROCEEDINGS- APPENDIX

None.

C-I